

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
 United States Patent and Trademark
 Office
 Box PCT
 Washington, D.C. 20231
 ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 19 January 2000 (19.01.00)	Applicant's or agent's file reference
International application No. PCT/AU99/00510	
International filing date (day/month/year) 23 June 1999 (23.06.99)	Priority date (day/month/year) 23 June 1998 (23.06.98)
Applicant JOHNSTONE, Peter	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

04 January 2000 (04.01.00)

☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer Juan Cruz Telephone No.: (41-22) 338.83.38
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PATENT COOPERATION TREATY

From the:
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

WATERMARK PATENT & TRADEMARK ATTORNEYS
Locked Bag 5
HAWTHORN VIC 3122

PCT NOTIFICATION OF TRANSMITTAL OF INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing
day/month/year 04 OCT 2000

Applicant's or agent's file reference

P15895PC00 SKP:JC

IMPORTANT NOTIFICATION

International application No.

PCT/AU99/00510

International filing date

23 June 1999

Priority date

23 June 1998

Applicant

FIRST GREEN PARK PTY. LTD. et al

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translations to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices)(Article 39(1))(see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide

Name and mailing address of the IPEA/AU

AUSTRALIAN PATENT OFFICE
PO BOX 200, WODEN ACT 2606, AUSTRALIA
E-mail address: pct@ipaaustralia.gov.au
Facsimile No. (02) 6285 3929

Authorized officer

DAVID LEE



Telephone No. (02) 6283 2107

PATENT COOPERATION TREATY

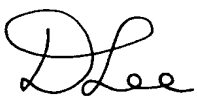
PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P15895PC00 SKP:JC	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International application No. PCT/AU99/00510	International filing date (<i>day/month/year</i>) 23 June 1999	Priority Date (<i>day/month/year</i>) 23 June 1998
International Patent Classification (IPC) or national classification and IPC Int. Cl. ⁷ B29C 71/00, 61/00, 55/00, 55/02, B65B 31/02, 53/00		
Applicant FIRST GREEN PARK PTY. LTD. et al		

1.	This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.																
2.	<p>This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of sheet(s).</p>																
3.	<p>This report contains indications relating to the following items:</p> <table border="0"> <tr> <td>I</td> <td><input checked="" type="checkbox"/> Basis of the report</td> </tr> <tr> <td>II</td> <td><input type="checkbox"/> Priority</td> </tr> <tr> <td>III</td> <td><input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td>IV</td> <td><input type="checkbox"/> Lack of unity of invention</td> </tr> <tr> <td>V</td> <td><input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td>VI</td> <td><input checked="" type="checkbox"/> Certain documents cited</td> </tr> <tr> <td>VII</td> <td><input type="checkbox"/> Certain defects in the international application</td> </tr> <tr> <td>VIII</td> <td><input checked="" type="checkbox"/> Certain observations on the international application</td> </tr> </table>	I	<input checked="" type="checkbox"/> Basis of the report	II	<input type="checkbox"/> Priority	III	<input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	IV	<input type="checkbox"/> Lack of unity of invention	V	<input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	VI	<input checked="" type="checkbox"/> Certain documents cited	VII	<input type="checkbox"/> Certain defects in the international application	VIII	<input checked="" type="checkbox"/> Certain observations on the international application
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VII	<input type="checkbox"/> Certain defects in the international application																
VIII	<input checked="" type="checkbox"/> Certain observations on the international application																

Date of submission of the demand 4 January 2000	Date of completion of the report 28 September 2000
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer DAVID LEE  Telephone No. (02) 6283 2107

I. Basis of the report**1. With regard to the elements of the international application:***

- ☒ the international application as originally filed.
- ☐ the description, pages , as originally filed,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the claims, pages , as originally filed,
 pages , as amended (together with any statement) under Article 19,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the drawings, pages , as originally filed,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the sequence listing part of the description:
 pages , as originally filed
 pages , filed with the demand
 pages , received on with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, was on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig.

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims 8	YES
	Claims 1-7, 9-28	NO
Inventive step (IS)	Claims 8	YES
	Claims 1-7, 9-28	NO
Industrial applicability (IA)	Claims 1-28	YES
	Claims	NO

2. Citations and explanations (Rule 70.7)

EP 225631, GB 2083002, GB 2063809, US 5458841, WO 9404419

NOVELTY & INVENTIVE STEP

The citations all disclose plastic films that are stretched then relaxed (partially) to give better characteristics for the application at hand. These applications are typically heat insulating, greater shrink wrap strength (per unit thickness), achieving a greater young's modulus and greater degree of crystallinity (see EP 225631). These latter features to the skilled worker clearly result in an improved (per unit thickness) resistance to gas permeability (greater density per unit thickness) and with crystallinity, a greater degree of resistance to breakdown (by UV) due to the greater stability of a crystalline structure over an amorphous structure.

Whilst the EP citation uses many steps, it still nevertheless uses the steps of the claims.

The attorney submits that "we do not think it is correct to claim these characteristics actually result from the procedures disclosed in EP 225631,...."(ie "improved" characteristics)

For the reasons I mentioned above, it is quite clear that the end product of the citation is "improved".

Also, as I mentioned in Box VIII of the first opinion, and in this opinion, the term "improved" is both misleading and does not define the invention described.

If the page 6 definition of improved was inserted into the claims, rather than the generic, imprecise and vague "improved" in general, then clearly the claims are displaying an advantage over the citations.

Regarding the claims referring to packaging of silage and packaging in anaerobic atmospheres, the claims are still basically define the packaging film per se, and just giving it a multitude of uses which are already well known for packaging films.

The actual percentages of relaxation etc as defined in the claims are covered by the citations.

Hence, claims 1-7 & 9-28 lack novelty and inventive step.

None of the citations suggest using their plastic films as part of a laminate with other plastic films.

Hence, Claim 8 is novel and has an inventive step

VI. Certain documents cited**1. Certain published documents (Rule 70.10)**

Application No. Patent No.	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
WO 9850219	12 November 1998	1 May 1998	1 May 1997

2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure	Date of non-written disclosure (day/month/year)	Date of written disclosure referring to non-written disclosure (day/month/year)
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VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claims 1 and 2 are misleading and do not define the invention described due to the term "improved".

The definition of "improved" on page 6, lines 9-11 is that the material thus formed has,

- (1) an increased resistance to UV degradation, and
- (2) an increased resistance to gas (oxygen) transmissivity,
per unit thickness of material.

This is not the same as "improved" per se, which is what the claims are stating.

The term "improved" is generic, vague, imprecise and meaningless without further clarification.

NOTICE: This communication is intended to be received only by the individual or entity to whom or to which it is addressed and contains information that is privileged, confidential and subject to copyright. Any unauthorized use, copying, review or disclosure is prohibited. Please advise incorrectly addressed or incomplete faxes by return facsimile quoting: P15895PC00 SKP:JC

**** SIGNED ORIGINAL BY MAIL ****

Please reply to Melbourne office

Key Contact Stephen K. Plymin

FAX NO: (02) 6285 3929

PAGES: (2)

DATE: April 7, 2000

OUR REF: P15895PC00 SKP:JC

Attention: Mr. David Lee
International Preliminary Examining Authority
Australian Patent Office
PO Box 200
WODEN ACT 2606

Dear Sir,

Re: International Patent Application No. PCT/AU99/00510 filed in the
name of FIRST GREEN PARK PTY LTD

We refer to the first Written Opinion dated 8th February, 2000.

European Patent Specification No. 0225631 discloses a method of producing a polyethylene-2,6-naphthalate film for plastic film capacitors, the method comprising a series of steps including hot melt extruding polyethylene-2,6-naphthalate which has certain required characteristics, hot stretching the film in the machine direction at a temperature of 120° to 170°C, hot stretching the film at a temperature of 120° to 180°C in the transverse direction, heat setting the film at a temperature of 130° to 240°C while subjecting the film to relaxation in the transverse direction, hot restretching the film in the machine direction at a temperature of 140°C to 200°C, heat setting the film at a temperature of 240°C to the melting point while restretching the film in the transverse direction, and again relaxing the film in the transverse direction. The specification itself does not claim the end product has either an improved resistance to degradation from UV light radiation or an improved resistance to gas transmissivity. We respectfully do not think it is correct to claim that these characteristics actually result from the procedures disclosed in EP 0225631 nor do we think it is correct to suggest that a skilled worker in this field would necessarily imply that the end product arising from the methods disclosed

in EP 0225631 would have these characteristics. Claims 1 and 2 define a simple process of essentially cold stretching a plastics material member in one direction beyond its yield point to increase its length and decrease its width and thereafter at least partially relaxing the stretched plastics material member to either or both provide improved resistance to UV light degradation and gas transmissivity. We would respectfully submit that EP 0225631 does not disclose this. Claims 14 and 15 and claims 26 and 27 of the present application define methods of creating an anaerobic atmosphere within a wrapped envelope and a plastic film and wrapped envelope capable of providing an anaerobic atmosphere. EP 0225631 relates specifically to plastic film capacitors, and therefore could clearly not disclose such a method, films or wrapped envelopes. Claims 1, 19 and 20 of the present application relate to methods of making silage and we would again submit that EP 0225631 could not disclose such methods. We would respectfully seek favourable reconsideration of the novelty and inventive step of the present claims relative to EP 0225631.

The Examiner does not specifically comment on any of the other cited references. We would respectfully submit that each of these further references essentially disclose pre-stretching of a film prior to application to a load. GB specification numbers 2083002 and 2063809 do not appear to disclose relaxing of the film prior to application of the stretched film to the load. We would respectfully submit the same applies to U.S. Patent No. 5797240. U.S. Patent No. 5,458,841 discloses relaxing of the film after pre-stretching, however, it certainly does not disclose relaxing to the extent necessary to achieve an improved resistance to UV light degradation or an improved resistance to gas transmissivity.

In the light of the foregoing, we would seek your favourable reconsideration of the Novelty and Inventive step opinion.

Yours respectfully,
WATERMARK

Stephen K. Plymin

PATENT COOPERATION TREATY

From the:
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

Watermark Patent & Trademark Attorneys
Locked Bag 5
HAWTHORN VIC 3122

PCT

WRITTEN OPINION

(PCT Rule 66)

<p>Date of mailing (day/month/year) 8 Feb 2000</p>		
<p>Applicant's or agent's file reference P15895PC00</p>	<p>REPLY DUE within Two Months from the above date of mailing</p>	
<p>International application No. PCT/AU 99/00510</p>	<p>International filing date (day/month/year) 23 June 1999</p>	<p>Priority Date (day/month/year) 23 June 1998</p>
<p>International Patent Classification (IPC) or both national classification and IPC Int. Cl.⁷ B29C 71/00, 61/00, 55/00, 55/02, B65B 31/02, 53/00</p>		
<p>Applicant FIRST GREEN PARK PTY. LTD.</p>		

1. This written opinion is the **First** drawn by this International Preliminary Examining Authority.
2. This opinion contains indications relating to the following items:

I	<input checked="" type="checkbox"/>	Basis of the opinion
II	<input type="checkbox"/>	Priority
III	<input type="checkbox"/>	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
IV	<input type="checkbox"/>	Lack of unity of invention
V	<input checked="" type="checkbox"/>	Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
VI	<input checked="" type="checkbox"/>	Certain documents cited
VII	<input type="checkbox"/>	Certain defects in the international application
VIII	<input checked="" type="checkbox"/>	Certain observations on the international application
3. The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.
4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is: **23 October 2000**

Name and mailing address of the IPEA/AU

AUSTRALIAN PATENT OFFICE
PO BOX 200, WODEN ACT 2606, AUSTRALIA
E-mail address: pct@ipaaustralia.gov.au
Facsimile No. (02) 6285 3929

Authorized Officer

DAVID LEE

Telephone No. (02) 6283 2107



I. Basis of the opinion

1. With regard to the **elements** of the international application:*

- ☒ the international application as originally filed.
- ☐ the description, pages , as originally filed,
 pages , filed with the demand,
 pages , filed with the letter of .
- ☐ the claims, pages , as originally filed,
 pages , as amended under Article 19,
 pages , filed with the demand,
 pages , filed with the letter of .
- ☐ the drawings, pages , as originally filed,
 pages , filed with the demand,
 pages , filed with the letter of .
- ☐ the sequence listing part of the description:
 pages , as originally filed
 pages , filed with the demand
 pages , filed with the letter of .

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the written opinion was drawn on the basis of the sequence listing:

- ☐ contained in the international application in printed form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig.

5. ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 8	YES
	Claims 1-7, 9-28	NO
Inventive step (IS)	Claims 8	YES
	Claims 1-7, 9-28	NO
Industrial applicability (IA)	Claims 1-28	YES
	Claims	NO

2. Citations and explanations

EP 225631, GB 2083002, GB 2063809, US 5458841, WO 9404419 (equivalent of US 5797240 in the ISR)

NOVELTY & INVENTIVE STEP

The citations all disclose plastic films that are stretched then relaxed (partially) to give better characteristics for the application at hand. These applications are typically heat insulating, greater shrink wrap strength (per unit thickness), achieving a greater young's modulus and greater degree of crystallinity (see EP 225631). These latter features to the skilled worker clearly result in an improved (per unit thickness) resistance to gas permeability (greater density per unit thickness) and with crystallinity, a greater degree of resistance to breakdown (by UV) due to the greater stability of a crystalline structure over an amorphous structure.

The actual percentages of relaxation etc as defined in the claims are covered by the citations.

Hence, claims 1-7 & 9-28 lack novelty and inventive step.

None of the citations suggest using their plastic films as part of a laminate with other plastic films.

Hence, Claim 8 is novel and has an inventive step.

VI. Certain documents cited**1. Certain published documents (Rule 70.10)**

Application No. Patent No.	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
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WO 9850219	12 November 1998	1 May 1998	1 May 1997
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2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure	Date of non-written disclosure (day/month/year)	Date of written disclosure referring to non- written disclosure (day/month/year)
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VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

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This is not the same as "improved" per se, which is what the claims are stating.

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To:

WATERMARK PATENT & TRADEMARK
ATTORNEYS
Locked Bag 5
HAWTHORN VIC 3122

PCT

WRITTEN OPINION

(PCT Rule 66)

Applicant's or agent's file reference SKP:JCC		Date of mailing (day/month/year) 26 April 2000
International application No. PCT/AU99/00510		REPLY DUE within TWO MONTHS from the above date of mailing
International filing date (day/month/year) 23 June 1999	Priority Date (day/month/year) 23 June 1998	
International Patent Classification (IPC) or both national classification and IPC Int. Cl. ⁷ B29C 71/00, 61/00, 55/00, 55/02, B65B 31/02, 53/00		
Applicant FIRST GREEN PARK PTY. LTD. et al		

- This written opinion is the **second** drawn by this International Preliminary Examining Authority.
- This opinion contains indications relating to the following items:
 - ☒ Basis of the opinion
 - ☐ Priority
 - ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - ☐ Lack of unity of invention
 - ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - ☒ Certain documents cited
 - ☐ Certain defects in the international application
 - ☒ Certain observations on the international application

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If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

The final date by which the international preliminary examination report must be established according to Rule 69.2 is: **23 October 2000**

Name and mailing address of the IPEA/AU

AUSTRALIAN PATENT OFFICE
PO BOX 200, WODEN ACT 2606, AUSTRALIA
e-mail address: pct@ipaustalia.gov.au
telex No. (02) 6285 3929

Authorized Officer

DAVID LEE

Telephone No. (02) 6283 2107

D Lee

I Basis of the opinion

1. With regard to the elements of the international application:*

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** Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed"*

WRITTEN OPINION

International application No.

PCT/AU99/00510

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 8	YES
	Claims 1-7, 9-28	NO
Inventive step (IS)	Claims 8	YES
	Claims 1-7, 9-28	NO
Industrial applicability (IA)	Claims 1-28	YES
	Claims	NO

2. Citations and explanations

EP 225631, GB 2083002, GB 2063809, US 5458841, WO 9404419

NOVELTY & INVENTIVE STEP

The citations all disclose plastic films that are stretched then relaxed (partially) to give better characteristics for the application at hand. These applications are typically heat insulating, greater shrink wrap strength (per unit thickness), achieving a greater young's modulus and greater degree of crystallinity (see EP 225631). These latter features to the skilled worker clearly result in an improved (per unit thickness) resistance to gas permeability (greater density per unit thickness) and with crystallinity, a greater degree of resistance to breakdown (by UV) due to the greater stability of a crystalline structure over an amorphous structure.

Whilst the EP citation uses many steps, it still nevertheless uses the steps of the claims.

The attorney submits that "we do not think it is correct to claim these characteristics actually result from the procedures disclosed in EP 225631,...."(ie "improved" characteristics)

For the reasons I mentioned above, it is quite clear that the end product of the citation is "improved".

Also, as I mentioned in Box VIII of the first opinion, and in this opinion, the term "improved" is both misleading and does not define the invention described.

If the page 6 definition of improved was inserted into the claims, rather than the generic, imprecise and vague "improved" in general, then clearly the claims are displaying an advantage over the citations.

Regarding the claims referring to packaging of silage and packaging in anaerobic atmospheres, the claims are still basically define the packaging film per se, and just giving it a multitude of uses which are already well known for packaging films.

The actual percentages of relaxation etc as defined in the claims are covered by the citations.

Hence, claims 1-7 & 9-28 lack novelty and inventive step.

None of the citations suggest using their plastic films as part of a laminate with other plastic films.

Hence, Claim 8 is novel and has an inventive step

VI. Certain documents cited**1. Certain published documents (Rule 70.10)**

Application No. Patent No.	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
WO 9850219	12 November 1998	1 May 1998	1 May 1997

2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure	Date of non-written disclosure (day/month/year)	Date of written disclosure referring to non- written disclosure (day/month/year)
--------------------------------	--	--

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claims 1 and 2 are misleading and do not define the invention described due to the term "improved".

The definition of "improved" on page 6, lines 9-11 is that the material thus formed has,

- (1) an increased resistance to UV degradation, and
- (2) an increased resistance to gas (oxygen) transmissivity,
per unit thickness of material.

This is not the same as "improved" per se, which is what the claims are stating.

The term "improved" is generic, vague, imprecise and meaningless without further clarification.

PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For Receiving Office use only

International Application No.

International Filing Date

Name of Receiving Office and "PCT International Application"

Applicant's or agent's file reference
(if desired) (12 characters maximum)

B x No. I TITLE OF INVENTION

PRE-STRETCHED FILM

B x No. II APPLICANT

Name and Address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

FIRST GREEN PARK PTY LTD.,
34-36 LAKESIDE AVENUE
RESERVOIR. VICTORIA 3073.
AUSTRALIA.

☐ This person is also inventor.

Telephone No.

Facsimile No.

Teleprinter No.

State (i.e. country) of nationality:
AUSTRALIA

State (i.e. country) of residence:
AUSTRALIA

This person is applicant
for the purposes of:

☐ all designated
States

☒ all designated States except
the United States of America

☐ the United States
of America only

☐ The States indicated in
the Supplemental Box

B x No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

Name and Address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

JOHNSTONE, PETER
C/O. 83-85 BANBURY ROAD,
RESERVOIR.
VICTORIA 3073.
AUSTRALIA

This person is:

☐ applicant only

☒ applicant and inventor

☐ inventor only (If this check-box
is marked, do not fill in below.)

State (i.e. country) of nationality:
AUSTRALIA

State (i.e. country) of residence:
AUSTRALIA

This person is applicant
for the purposes of:

☐ all designated
States

☐ all designated States except
the United States of America

☒ the United States
of America only

☐ the States indicated in
the Supplemental Box

☐ Further applicants and/or (further) inventors are indicated on a continuation sheet.

B x No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf
of the applicant(s) before the competent International Authorities as:

☒ agent

☐ common representative

Name and Address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

WATERMARK PATENT & TRADEMARK ATTORNEYS
2ND FLOOR, 390 BURWOOD ROAD,
HAWTHORN. VICTORIA 3122.
AUSTRALIA.

Telephone No.

(613) 9819 1664

Facsimile No.

(613) 9819 6010

Teleprinter No.

AA 31762

☐ Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

Box No. V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes; at least one must be marked):

Regional Patent

- ☒ **AP** **ARIPO Patent:** GH Ghana, GM Gambia KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SZ Swaziland, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☒ **EA** **Eurasian Patent:** AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☒ **EP** **European Patent:** AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☒ **OA** **OAPI Patent:** BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line)

National Patent (if other kind of protection or treatment desired, specify on dotted line):

- | | |
|---|---|
| <input checked="" type="checkbox"/> AL Albania | <input checked="" type="checkbox"/> LT Lithuania |
| <input checked="" type="checkbox"/> AM Armenia | <input checked="" type="checkbox"/> LU Luxembourg |
| <input checked="" type="checkbox"/> AT Austria | <input checked="" type="checkbox"/> LV Latvia |
| <input checked="" type="checkbox"/> AU Australia | <input checked="" type="checkbox"/> MD Republic of Moldova |
| <input checked="" type="checkbox"/> AZ Azerbaijan | <input checked="" type="checkbox"/> MG Madagascar |
| <input checked="" type="checkbox"/> BA Bosnia and Herzegovina | <input checked="" type="checkbox"/> MK The Former Yugoslav Republic of Macedonia |
| <input checked="" type="checkbox"/> BB Barbados | <input checked="" type="checkbox"/> MN Mongolia |
| <input checked="" type="checkbox"/> BG Bulgaria | <input checked="" type="checkbox"/> MW Malawi |
| <input checked="" type="checkbox"/> BR Brazil | <input checked="" type="checkbox"/> MX Mexico |
| <input checked="" type="checkbox"/> BY Belarus | <input checked="" type="checkbox"/> NO Norway |
| <input checked="" type="checkbox"/> CA Canada | <input checked="" type="checkbox"/> NZ New Zealand |
| <input checked="" type="checkbox"/> CH and LI Switzerland and Liechtenstein | <input checked="" type="checkbox"/> PL Poland |
| <input checked="" type="checkbox"/> CN China | <input checked="" type="checkbox"/> PT Portugal |
| <input checked="" type="checkbox"/> CU Cuba | <input checked="" type="checkbox"/> RO Romania |
| <input checked="" type="checkbox"/> CZ Czech Republic | <input checked="" type="checkbox"/> RU Russian Federation |
| <input checked="" type="checkbox"/> DE Germany | <input checked="" type="checkbox"/> SD Sudan |
| <input checked="" type="checkbox"/> DK Denmark | <input checked="" type="checkbox"/> SE Sweden |
| <input checked="" type="checkbox"/> EE Estonia | <input checked="" type="checkbox"/> SG Singapore |
| <input checked="" type="checkbox"/> ES Spain | <input checked="" type="checkbox"/> SI Slovenia |
| <input checked="" type="checkbox"/> FI Finland | <input checked="" type="checkbox"/> SK Slovakia |
| <input checked="" type="checkbox"/> GB United Kingdom | <input checked="" type="checkbox"/> SL Sierra Leone |
| <input checked="" type="checkbox"/> GD Grenada | <input checked="" type="checkbox"/> TJ Tajikistan |
| <input checked="" type="checkbox"/> GE Georgia | <input checked="" type="checkbox"/> TM Turkmenistan |
| <input checked="" type="checkbox"/> GH Ghana | <input checked="" type="checkbox"/> TR Turkey |
| <input checked="" type="checkbox"/> GM Gambia | <input checked="" type="checkbox"/> TT Trinidad and Tobago |
| <input checked="" type="checkbox"/> HR Croatia | <input checked="" type="checkbox"/> UA Ukraine |
| <input checked="" type="checkbox"/> HU Hungary | <input checked="" type="checkbox"/> UG Uganda |
| <input checked="" type="checkbox"/> ID Indonesia | <input checked="" type="checkbox"/> US United States of America |
| <input checked="" type="checkbox"/> IL Israel | <input checked="" type="checkbox"/> UZ Uzbekistan |
| <input checked="" type="checkbox"/> IN India | <input checked="" type="checkbox"/> VN Viet Nam |
| <input checked="" type="checkbox"/> IS Iceland | <input checked="" type="checkbox"/> YU Yugoslavia |
| <input checked="" type="checkbox"/> JP Japan | <input checked="" type="checkbox"/> ZW Zimbabwe |
| <input checked="" type="checkbox"/> KE Kenya | |
| <input checked="" type="checkbox"/> KG Kyrgyzstan | |
| <input checked="" type="checkbox"/> KP Democratic People's Republic of Korea | |
| <input checked="" type="checkbox"/> KR Republic of Korea | |
| <input checked="" type="checkbox"/> KZ Kazakstan | |
| <input checked="" type="checkbox"/> LC Saint Lucia | |
| <input checked="" type="checkbox"/> LK Sri Lanka | |
| <input checked="" type="checkbox"/> LR Liberia | |
| <input checked="" type="checkbox"/> LS Lesotho | |

Check-boxes reserved for designating States (for the purposes of a national patent) which have become party to the PCT after issuance of this sheet:

- ☒ **AE** United Arab Emirates
- ☒ **ZA** Republic of South Africa
- ☐

Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except the designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation of a designation consists of the filing of a notice specifying that designation and the payment of the designation and confirmation fees. Confirmation must reach the receiving Office within the 15-month time limit.)

Box No. VI PRIORITY CLAIM		<input type="checkbox"/> Further priority claims are indicated in the Supplemental Box		
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is :		
		national application: country	regional application: * regional Office	international application: receiving Office
item (1) (23.06.1998) 23rd June, 1998	PP 4294	AUSTRALIA		AUSTRALIA
item (2)				
item (3)				

☒ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s) : item 1

Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii). See Supplemental Box.

Box No. VII INTERNATIONAL SEARCHING AUTHORITY

Choice of International Searching Authority (ISA) (If two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen, the two-letter code may be used): ISA /	Request to use results of earlier search; reference to the search (if an earlier search has been carried out by or requested from the International Searching Authority): Date (day/month/year) Number Country (or regional Office)
---	---

Box No. VIII CHECK LIST; LANGUAGE OF FILING

The international application contains the following number of sheets: request : description (excluding sequence listing part) : claims : abstract : drawings : sequence listing part of description : Total number of sheets :	This international application is accompanied by the item(s) marked below: 1. <input type="checkbox"/> fee calculation sheet 2. <input type="checkbox"/> separate signed power of attorney 3. <input type="checkbox"/> copy of general power of attorney; reference number, if any: 4. <input type="checkbox"/> statement explaining lack of signature 5. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s): 6. <input type="checkbox"/> translation of international application into (language): 7. <input type="checkbox"/> separate indications concerning deposited microorganisms or other biological material 8. <input type="checkbox"/> nucleotide and/or amino acid sequence listing in computer readable form 9. <input type="checkbox"/> other (specify):
Figure of the drawings which should accompany the abstract:	Language of filing of the international application: ENGLISH

Box No. IX SIGNATURE OF APPLICANT OR AGENT

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

FIRST GREEN PARK PTY LTD.....

JOHNSTONE, PETER.....

For receiving Office use only		2. Drawings: <input type="checkbox"/> received: <input type="checkbox"/> not received:
1. Date of actual receipt of the purported international application:		
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:		
4. Date of timely receipt of the required corrections under PCT Article 11(2):		
5. International Searching Authority (if two or more are competent): ISA /	6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid	

For International Bureau use only
Date of receipt of the record copy by the International Bureau:

IPFA/

CHAPTER II

under Article 31 of the Patent Cooperation Treaty:

The undersigned requests that the international application specified below be the subject of international preliminary examination according to the Patent Cooperation Treaty.

For International Preliminary Examining Authority use only

For International Preliminary Examining Authority use only	
Identification of IPEA	Date of receipt of DEMAND
Box No. I IDENTIFICATION OF THE INTERNATIONAL APPLICATION	
Applicant's or agent's file reference	
International application No. PCT/AU99/00510	International filing date (day/month/year) (23.06.1999) 23rd June, 1999
(Earliest) Priority date (day/month/year) (23.06.1998) 23rd June, 1998	
Title of invention	
ORIENTATION OF FILMS TO IMPROVE BARRIER AND UV STABILITY	
Box No. II APPLICANT(S)	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)	
FIRST GREEN PARK PTY LTD. 34-36 LAKESIDE AVENUE RESERVOIR. VICTORIA 3073 AUSTRALIA.	
Telephone No.:	
Facsimile No.:	
Teleprinter No.:	
State (i.e. country) of nationality: AUSTRALIA	State (i.e. country) of residence: AUSTRALIA
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)	
JOHNSTONE, PETER C/o. 83-85 BANBURY ROAD, RESERVOIR. VICTORIA 3073. AUSTRALIA.	
State (i.e. country) of nationality: AUSTRALIA	State (i.e. country) of residence: AUSTRALIA
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)	
State (i.e. country) of nationality:	State (i.e. country) of residence:
Further applicants are indicated on a continuation sheet.	

Box No. III AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCEThe following person is ☒ agent ☐ common representativeand ☒ has been appointed earlier and represents the applicant(s) also for international preliminary examination.☐ is hereby appointed and any earlier appointment of (an) agent(s)/common representative is hereby revoked.☐ is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlier.Name and address: *(Family name followed by given name; for a legal entity, full official designation.
The address must include postal code and name of country.)*WATERMARK PATENT & TRADEMARK ATTORNEYS
2ND FLOOR, 290 BURWOOD ROAD,
HAWTHORN. VICTORIA 3122.
AUSTRALIA.

Telephone No.:

(613) 9819 1664

Facsimile No.:

(613) 9819 6010

Teleprinter No.:

AA 31762

☐ **Address for correspondence:** Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.**Box No. IV BASIS FOR INTERNATIONAL PRELIMINARY EXAMINATION****Statement concerning amendments:***

1. The applicant wishes the international Preliminary examination to start on the basis of:

☒ the international preliminary examination as originally filedthe description ☐ as originally filed☐ as amended under Article 34the claims ☐ as originally filed☐ as amended under Article 19 (together with any accompanying statement)☐ as amended under Article 34the drawings ☐ as originally filed☐ as amended under Article 342. ☐ The applicant wishes any amendments to the claims under Article 19 to be considered as reversed.3. ☐ The applicant wishes the start of the international preliminary examination to be postponed until the expiration of 20 months from the priority date unless the International Preliminary Examining Authority receives a copy of any amendments made under Article 19 or a notice from the applicant that he does not wish to make such amendments (Rule 69.1(d)). *(This check-box may be marked only where the time limit under Article 19 has not yet expired.)*

* Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended.

Language for the purposes of international preliminary examination: English☒ which is the language in which the international application was filed.☐ which is the language of a translation furnished for the purposes of international search.☐ which is the language of publication of the international application.☐ which is the language of the translation (to be) furnished for the purposes of international preliminary examination.**Box No. V ELECTION OF STATES**The applicant hereby elects all eligible States *(that is, all States which have been designated and which are bound by Chapter II of the PCT)*

excluding the following States which the applicant wishes not to elect:

Box No. VI CHECK LIST

The demand is accompanied by the following elements, in the language referred to in Box No. IV, for the purposes of international preliminary examination:

- | | | |
|--|---|--------|
| 1. translation of international application | : | sheets |
| 2. amendments under Article 34 | : | sheets |
| 3. copy (or, where required, translation) of amendments under Article 19 | : | sheets |
| 4. copy (or, where required, translation) of statement under Article 19 | : | sheets |
| 5. letter | : | sheets |
| 6. other (<i>specify</i>): | : | sheets |

For International Preliminary
Examining Authority use only

received not received

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

The demand is also accompanied by the item(s) marked below:

- | | |
|--|---|
| 1. <input checked="" type="checkbox"/> fee calculation sheet | 4. <input type="checkbox"/> statement explaining lack of signature |
| 2. <input type="checkbox"/> separate signed power of attorney | 5. <input type="checkbox"/> nucleotide and or amino acid sequence listing in computer readable form |
| 3. <input type="checkbox"/> copy of general power of attorney; reference number, if any: | 6. <input type="checkbox"/> other (<i>specify</i>): |

Box No. VII SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand).



STEPHEN K PLYMIN, Registered Patent Attorney
for and on behalf of WATERMARK PATENT & TRADEMARK ATTORNEYS

For International Preliminary Examining Authority use only

- | | |
|--|---|
| 1. Date of actual receipt of DEMAND: | |
| 2. Adjusted date of receipt of demand due to CORRECTIONS under Rule 60.1(b): | |
| 3. <input type="checkbox"/> The date of receipt of the demand is AFTER the expiration of 19 months from the priority date and item 4 or 5, below, does not apply | <input type="checkbox"/> The applicant has been informed accordingly. |
| 4. <input type="checkbox"/> The date of receipt of the demand is WITHIN the period of 19 months from the priority date as extended by virtue of Rule 80.5. | |
| 5. <input type="checkbox"/> Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival is EXCUSED pursuant to Rule 82. | |

For International Bureau use only

Demand received from IPEA on:


PATENT COOPERATION TREATY
PCT
INTERNATIONAL PRELIMINARY EXAMINATION REPORT
(PCT Article 36 and Rule 70)

15
RECD 10 OCT 2000

PCT

Applicant's or agent's file reference P15895PC00 SKP:JC	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).	
International application No. PCT/AU99/00510	International filing date (day/month/year) 23 June 1999	Priority Date (day/month/year) 23 June 1998
International Patent Classification (IPC) or national classification and IPC Int. Cl. ⁷ B29C 71/00, 61/00, 55/00, 55/02, B65B 31/02, 53/00		
Applicant FIRST GREEN PARK PTY. LTD. et al		

1.	This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of 5 sheets, including this cover sheet. <input type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of sheet(s).
3.	This report contains indications relating to the following items: I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input checked="" type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input checked="" type="checkbox"/> Certain observations on the international application

Date of submission of the demand 4 January 2000	Date of completion of the report 28 September 2000
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer DAVID LEE  Telephone No. (02) 6283 2107

I. Basis of the report**1. With regard to the elements of the international application:***

- ☒ the international application as originally filed.
- ☐ the description, pages , as originally filed,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the claims, pages , as originally filed,
 pages , as amended (together with any statement) under Article 19,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the drawings, pages , as originally filed,
 pages , filed with the demand,
 pages , received on with the letter of
- ☐ the sequence listing part of the description:
 pages , as originally filed
 pages , filed with the demand
 pages , received on with the letter of

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, was on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/fig.

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 8	YES
	Claims 1-7, 9-28	NO
Inventive step (IS)	Claims 8	YES
	Claims 1-7, 9-28	NO
Industrial applicability (IA)	Claims 1-28	YES
	Claims	NO

2. Citations and explanations (Rule 70.7)

EP 225631, GB 2083002, GB 2063809, US 5458841, WO 9404419

NOVELTY & INVENTIVE STEP

The citations all disclose plastic films that are stretched then relaxed (partially) to give better characteristics for the application at hand. These applications are typically heat insulating, greater shrink wrap strength (per unit thickness), achieving a greater young's modulus and greater degree of crystallinity (see EP 225631). These latter features to the skilled worker clearly result in an improved (per unit thickness) resistance to gas permeability (greater density per unit thickness) and with crystallinity, a greater degree of resistance to breakdown (by UV) due to the greater stability of a crystalline structure over an amorphous structure.

Whilst the EP citation uses many steps, it still nevertheless uses the steps of the claims.

The attorney submits that "we do not think it is correct to claim these characteristics actually result from the procedures disclosed in EP 225631,...."(ie "improved" characteristics)

For the reasons I mentioned above, it is quite clear that the end product of the citation is "improved".

Also, as I mentioned in Box VIII of the first opinion, and in this opinion, the term "improved" is both misleading and does not define the invention described.

If the page 6 definition of improved was inserted into the claims, rather than the generic, imprecise and vague "improved" in general, then clearly the claims are displaying an advantage over the citations.

Regarding the claims referring to packaging of silage and packaging in anaerobic atmospheres, the claims are still basically define the packaging film per se, and just giving it a multitude of uses which are already well known for packaging films.

The actual percentages of relaxation etc as defined in the claims are covered by the citations.

Hence, claims 1-7 & 9-28 lack novelty and inventive step.

None of the citations suggest using their plastic films as part of a laminate with other plastic films.

Hence, Claim 8 is novel and has an inventive step

VI. Certain documents cited**1. Certain published documents (Rule 70.10)**

Application No. Patent No.	Publication date (day/month/year)	Filing date (day/month/year)	Priority date (valid claim) (day/month/year)
WO 9850219	12 November 1998	1 May 1998	1 May 1997

2. Non-written disclosures (Rule 70.9)

Kind of non-written disclosure	Date of non-written disclosure (day/month/year)	Date of written disclosure referring to non-written disclosure (day/month/year)
--------------------------------	--	---

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

Claims 1 and 2 are misleading and do not define the invention described due to the term "improved".

The definition of "improved" on page 6, lines 9-11 is that the material thus formed has,

- (1) an increased resistance to UV degradation, and
- (2) an increased resistance to gas (oxygen) transmissivity,
per unit thickness of material.

This is not the same as "improved" per se, which is what the claims are stating.

The term "improved" is generic, vague, imprecise and meaningless without further clarification.

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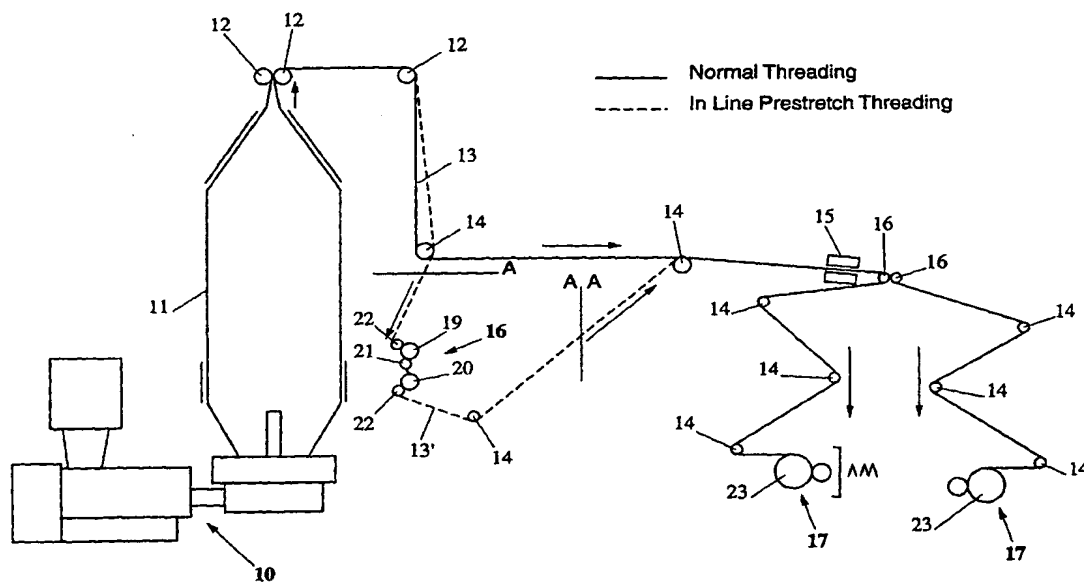
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(54) Title: ORIENTATION OF FILMS TO IMPROVE BARRIER AND UV STABILITY



(57) Abstract

The invention disclosed herein relates to a method of treating plastics material fibres, filaments or film to improve their resistance to degradation by UV radiation and/or increase their resistance to gas (oxygen) transmissivity and an improved plastics material so treated, the method including stretching the fibre, filament or film beyond its yield point and allowing the film to at least partially relax.

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**ORIENTATION OF FILMS TO IMPROVE BARRIER
AND UV STABILITY**

The present invention relates to improved methods of processing plastics material film to decrease their permeability to oxygen or other gases and/or to
5 improve their resistance to degradation from ultra-violet light radiation.

Many plastics material films, fibres or filaments are used in external applications where they are subject to ultra-violet radiation and may therefore degrade more quickly than would otherwise be expected. Such applications include (but are not limited to) coverings for shade or propagation houses,
10 shade cloth, nets, ropes and cords, tarps, agricultural films including ground cover sheets or webs to protect plants or prevent weed growth, garbage or trash collection bags, films and wrapping material for silage production. With such applications, it is often desirable to increase their useful life by increasing their resistance to ultra-violet (UV) degradation or alternatively to at least maintain
15 their current life capabilities while reducing their costs. It is known to use various additives to the resin formulation used to manufacture films, fibres and filaments to increase their ability to resist UV degradation, however, the use of such additives increase the complication and cost of such plastics material film, fibre and filament production.

20 It has further been recognised, at least in relation to industrial or commercial packaging / wrapping applications, that less plastic material film in volume can be used if the film is produced with reduced thickness levels and typically with thickness levels that cannot be reliably produced by conventional extrusion techniques. These films are produced by stretching techniques
25 beyond the yield point of the plastics material film such that the film length is substantially increased and its thickness is reduced. Examples of such films and methods of producing same may be found in Australian Patent Specification No. 643902 and German Specification No. P3409117.

In certain further applications, it is desirable to provide a plastics material
30 film that has an increased resistance to the transmission of oxygen (or other gases) through the film. Such applications might include wrapping the film to form a container or envelope for any object or material that would benefit from

an anaerobic atmosphere during storage. One particular application of this type is of course the production of silage where a bale of silage making material such as wilted grass is wrapped in an anaerobic envelope of plastics material film. It has not, however, been thought to use stretched film of the type disclosed in
5 Australian Patent Specification No. 643902 or German Specification No. P3409117 for use in applications where an anaerobic envelope is desired because of a perceived likelihood that there would be an unacceptably high increase in the flow rate of oxygen through such thinned plastics material film. Moreover, it was considered possible that increased oxygen levels within the
10 plastics material film could increase the likelihood of degradation of the film by ultra-violet radiation when the film might be used in applications where they would be subject to ultra-violet light radiation.

An objective therefore of the present invention is to provide a plastics material product and a method of making same where the plastics material of
15 the product has either or both an improved resistance to UV degradation, and an improved resistance to the transmission of oxygen or other gases. A preferred objective is to provide both a pre-stretched plastics material film and a method of wrapping object(s) with pre-stretched plastics material film that will enable an anaerobic atmosphere to be maintained within the wrapping
20 envelope. A still further preferred objective of the invention is to provide a method of wrapping material with pre-stretched plastics material to produce silage and of course a method of producing silage thereby.

Accordingly, in one aspect the present invention provides a method of forming a plastics material product including providing a plastics material
25 member being a film, fibre or filament and stretching said member beyond its yield point to decrease its thickness and increase its length, at least partially relaxing said stretched plastics material member to form said product whereby the plastics material member achieves either or both

- (i) an improved resistance to degradation from UV light radiation, and
- 30 (ii) an improved resistance to oxygen or other gas transmissivity, and forming said plastics material member into said product.

The present invention also provides a method of forming a plastics material product, said method including providing a plastics material member being a film, fibre or filament and stretching said member beyond its yield point to decrease its thickness and increase its length, and at least partially relaxing
5 said stretched plastics material member to form said product whereby the plastics material member achieves either or both

- (i) an improved resistance to UV degradation, and
- (ii) an improved resistance to oxygen or other gas transmissivity.

According to the present invention there is also provided a plastics
10 material member having a decreased oxygen permeability and increased resistance to UV degradation, said plastics material member being a film, fibre or filament, stretched beyond its yield point to decrease its thickness and increase its length, said plastics material member being at least partially relaxed.

15 There is provided according to the present invention a plastics material member having a decreased oxygen permeability, said product plastics material member being a film, fibre or filament, stretched beyond its yield point to decrease its thickness and increase its length, said plastics material member being at least partially relaxed.

20 There is also provided according to the present invention a plastics material member having an increased resistance to UV degradation, said plastics material member being a film, fibre or filament, stretched beyond its yield point to decrease its thickness and increase its length, said plastics material member being at least partially relaxed.

25 Preferably, the plastics material member is uniformly relaxed across its cross-section transverse to the stretching direction whereby the effects of either or both the resistance to UV degradation or barrier qualities occur evenly across the plastics material member. It has been surprisingly found that stretching plastics material and then relaxing same as aforesaid will normally achieve a
30 significant improvement in resistance to UV degradation and also an improved resistance to oxygen and other gas transmissivity. This is achieved with a relatively simple manufacturing step and without the need of costly and

complicated additives to the resin formulation although of course, the present invention does not exclude the possibility of including additives to the formulation to further enhance performance. The plastics material may be any polyolefin including LLDPE, octane, metallocenes, LDPE, HDPE, 5 Polypropylene, Polystyrene, EVOH, EVA, PVC, Nylon or any combination of these resins.

When the plastics material member is film, the plastics material product formed may be the film itself or an anaerobic envelope formed by wrapping the film about an object or objects to be wrapped. When the plastics material is 10 fibre or filament, the product formed may be ropes, cords or the like or knitted or woven products such as nets, shade cloth or the like.

According to this aspect, the present invention also provides a plastics material product having a decreased oxygen permeability and/or increased resistance to UV degradation, said product being formed from a plastics material 15 member being a film, fibre or filament, stretched beyond its yield point to decrease its thickness and increase its length, said plastics material member being at least partially relaxed before being formed into said product.

Conveniently, the stretched plastics material member is relaxed by at least 5% of its total stretched length and up to or beyond 10% of its total 20 stretched length. It has been recognised that stretching the film a second time after the film has been stretched and relaxed in accordance with this invention will not adversely affect the properties of the film.

It has further been recognised that the procedure of stretching and relaxing plastics material film as aforesaid improves the barrier properties of the 25 film. It has further been recognised that stretching the plastics material film a second time after the initial stretch and relax process steps will not adversely affect either or both the barrier properties of the film and the resistance to UV degradation. If desired the film may be relaxed again after secondary or further stretching.

30 It may be desirable in some applications for the plastics material member to have no memory remaining in the material. In such applications, after the at least partial relaxation, the plastics material may be fixed at the length after

relaxation by removal of memory through a process such as an annealing process, e.g. heating and immediately quenching (cooling), whereby contraction of the film is prevented. When the plastics material member fixed in length in this way is a film, said film may be laminated with at least one other material
5 layer which may, for example, be another plastics material film layer, a metal film or foil layer, or combinations of same. It is of course also possible to laminate two or more films together, each of which have been separately treated in accordance with this invention, or alternatively laminate such films together prior to treatment and thereafter apply the procedures of this invention to the
10 laminated film.

According to a further aspect of this invention, there is provided a method of wrapping a material, object or objects, to create an anaerobic atmosphere within a wrapping envelope, said method including providing an at least partially relaxed plastics material film pre-stretched beyond its yield point to
15 increase its length and decrease its thickness, applying said pre-stretched plastics material film to be wrapped in at least one layer with at least sufficient applied further tension to form said wrapping envelope with an anaerobic atmosphere therewithin.

According to a further aspect, the present invention provides a method of
20 wrapping a material, object or objects to create an anaerobic atmosphere within a wrapping envelope, said method including providing a plastics material film and stretching said film beyond its yield point to decrease the thickness and increase the length of the film, at least partially relaxing said stretched plastics material film, applying said partially or fully relaxed stretched plastics material
25 film to be wrapped in at least one layer with at least sufficient applied further tension to form said wrapping envelope with an anaerobic atmosphere therewithin. Preferably the at least partially relaxing of said stretched plastics material film occurs uniformly across the full width of said film.

In accordance with yet a further aspect of the present invention, a plastics
30 material film is provided, said film being first stretched beyond its yield point to increase its length and decrease its thickness, said film being at least partially relaxed. If desired, the film may be stretched again after the at least partial

relaxation of the film. The second or further stretch may be to an extent less than the initial stretch or, if desired, go beyond this initial stretch and may also be followed by a further relaxation stage if desired. Still further stretch/relax stages could also be utilised at least without adversely affecting the barrier and UV resistant properties of the film.

It has been surprisingly found that by relaxing or partially relaxing the pre-stretched plastics material film, fibre or filament that has been stretched beyond its yield point results in a product that has a significantly increased resistance to gas (oxygen) transmissivity per unit thickness of the film, fibre or filament. Moreover, the material thus formed has an increased resistance to UV degradation per unit thickness of the material. In other words, if the film thickness is decreased by half in the pre-stretching process and relaxing, the gas transmissivity level (cc/m²/day) is not increased to twice its original level as might be expected but is significantly lower than this. Moreover, it has been surprisingly found that putting the plastics material film through a second stretching process, does not significantly adversely affect gas transmissivity level of the film, at least to an extent that would prevent its use in forming an anaerobic envelope. It will of course be apparent that the material to be wrapped may be any product, group of products or material that might benefit from an anaerobic atmosphere.

The present invention, in accordance with one aspect, has particular application to the silage making industry. Traditionally silage was and sometimes still is produced by placing wilted cut grass within a pit for a period of time. More recently silage has been produced by wrapping wilted cut grass in an envelope of plastics material film, typically the cut grass being formed into a round bale and then wrapped in at least two layers of plastics material film. The film conventionally used for this purpose is of the order of 25 microns in thickness and is stretched under tension as it is applied to the bale to wrap the bale tightly. Typically the wrapping tension is achieved by stretching the film at the point of application to the bale by 55-75%. It is well recognised that for good silage production, it is necessary to substantially restrict or prevent as far as possible, the flow of oxygen to the cut grass wrapped in the plastic film. It is

therefore conventional wisdom in the industry to wrap the bale in relatively thick film as it is believed this will restrict oxygen transmission through the plastics material film. Moreover, the film is normally applied with reasonably high tension to attempt to exclude or force air out of the bale as much as possible.

- 5 Thus, in accordance with a still further aspect, the present invention provides a method of making silage including the steps of forming a wrapping envelope about a bale of silage making material utilising an at least partially relaxed plastics material film pre-stretched before relaxation beyond its yield point to increase its length and decrease its thickness, applying said pre-
10 stretched plastics material film to be wrapped in at least one layer to form said wrapping envelope whereby said wrapping envelope has an increased resistance to degradation from UV light radiation.

 According to a still further aspect, the present invention provides a method of making silage, forming a wrapping envelope about said bale utilising
15 an at least partially relaxed plastics material film pre-stretched before relaxation beyond its yield point to increase its length and decrease its thickness, applying said pre-stretched plastics material film to be wrapped in at least one layer to form said wrapping envelope whereby an anaerobic atmosphere therewithin is established within said wrapping envelope.

- 20 According to yet another aspect, the present invention provides a method of making silage including providing a bale of silage making material, and forming a wrapping envelope about said bale having at least one layer of a pre-stretched plastics material film that has been stretched beyond its yield point to form a film with reduced thickness and increased length, at least partially
25 relaxing said film, and applying said pre-stretched plastics material film to said bale with at least sufficient tension to form said wrapping envelope with an anaerobic atmosphere therewithin.

 In accordance with yet another aspect, the present invention provides a method of making silage including providing a bale of silage making material,
30 forming a wrapping envelope about said bale utilising a plastics material film that has been first stretched beyond its yield point to increase its length and decrease its thickness and thereafter at least partially relaxed, said plastics

material film undergoing a secondary stretch after being at least partially relaxed, applying said plastics material film to be wrapped in at least one layer about said bale to form said wrapping envelope with an anaerobic atmosphere therewithin.

5 Preferably the aforesaid secondary stretch occurs prior to the film being applied to said bale. Alternatively, the secondary stretch may occur as the film is applied to the bale. Conveniently the secondary stretch may be either lower than or beyond the initial or pre-stretch level and may incorporate another relaxation step.

10 Conveniently the envelope is formed by at least two layers. Preferably, the envelope is formed by three, four or six layers.

Conveniently, the plastics material film for silage production is a linear low density polyethylene stretch film, preferably an octane, butene or hexthene. Preferably the film has been pre-stretched or is first stretched beyond its yield
15 point to an extent sufficient to increase its length by at least 75% and preferably by at least 100%. Preferably the film is initially about 25 to 50 microns thick and after the first stretch or pre-stretching it has a thickness of between 10 and 15 microns.

The term "anaerobic atmosphere" used above and hereinafter is intended
20 to identify an atmosphere that has minimal oxygen gas therein or flowing thereto to the extent sufficient for the material within the wrapped envelope to benefit satisfactorily therefrom. The terms "relaxed" or "relaxing" when referring to pre-stretched plastics material is intended to mean that the film is relaxed by a percentage of the total stretched length, preferably uniformly across the width or
25 cross-section of the plastics material. The film may contain some residual memory that in the absence of any restraining forces would cause the film to slowly contract in length over time. The terminology "secondary stretch" or "secondary stretching" used above and hereinafter refers to that percentage of elongation applied to the film after stretching and relaxing or partially relaxing.
30 The term "gas" used herein is intended to include "water vapour" and vapours of other fluids. The processes of this invention may be achieved by "cold" (i.e. atmospheric temperature) stretching and relaxation or it may be conducted in

some cases by first heating the film, fibre or filament.

While the invention has been described herein as requiring stretching of the film in one direction beyond its yield point and at least partially relaxing in the same direction, the invention does include within its scope biaxial stretching.

- 5 The stretching may occur simultaneously in two directions or may be stretched sequentially in two perpendicular directions. The at least partial relaxation may also occur simultaneously or sequentially in the two directions.

The present invention will hereinafter be described with reference to the accompanying drawings and examples set out in the following. In the annexed
10 drawings :-

Figure 1 illustrates a method of producing pre-stretched plastics material film wherein an extruder 10 operates in a known manner to generally inflate a film bubble 11 which is drawn up from the extruder 10 passing through primary nip rollers 12 to collapse the bubble. From the primary nip rollers 12 the plastics
15 material film 13 is passed via idler rollers 14, via a film trimming and/or splitting station 15, to secondary nip rollers 16 to be wound upon film winding rollers 17.

The plastics material film 13 may undergo a stretch process by following the path 13' shown in dashed outline via an in-line stretching unit 18 shown from A to AA. Alternatively, stretching of the film may occur as a separate
20 process by taking a roll of film 23 produced as shown in Figure 1 and passing same through a stretching unit 18 as shown from A to AAA of Figure 1 omitting of course the splitting unit 15. In either case the stretching unit 18 includes a low speed roller 19 and a high speed roller 20 with stretching of the film 13' occurring generally between these two rollers. The secondary nip rollers 16 are
25 driven at a speed similar to the high speed roller 20 with substantially complete relaxation (to the extent possible) of at least the elastic deformability of the film occurring between the secondary nip rollers 16 and the wind up roller 17. Each of the rollers 19, 20 has an associated idler nip roller 22 and there may be provided between the rollers 19, 22 and 20, 22, a film width adjustment roller 21.

The above described arrangement permits, by adjusting the relative speeds of the rollers 19 and 20, a stretching of the plastics material film beyond its yield point to simultaneously lengthen the film and reduce its thickness. By

appropriately adjusting the speeds of the rollers, it is possible to vary the stretching of the film beyond its yield point to achieve desired film lengthening and film thickness reductions. For example, a plastics material film that is stretched to twice its length will have approximately half its original thickness.

- 5 In the following example, a plastics material film initially at 21 microns thickness was stretched beyond its yield point to effectively reduce its thickness by half, that is 10.5 microns. The plastics material film was tested prior to stretching and after stretching to determine its capability of resisting oxygen transmission. Each film, i.e. the 21 micron non-stretched film and the 10.5
10 micron pre-stretched film (after initially relaxing) was then stretched a further 10% within the retained elasticity of the film in each case to simulate the application of each sample to a bale for the purpose of making silage under a small tension force. The oxygen transmissivity of the film in each case was further tested and the results obtained are set out in the following table.

Sample (low density polyethylene plastics material film)	Film Thickness (microns)	Oxygen transmissivity (cc/m ² /day) (no further stretching)	Oxygen transmissivity (cc/m ² /day) (after elastic stretching of 10%)
A (not stretched)	21	14,000	21,600
B (sample A pre-stretched beyond its yield point)	10.5	17,400	18,700

- It will be apparent from the foregoing figures that by pre-stretching the film to approximately half its thickness, there surprisingly results only a 24.3% increase in the oxygen transferred through the film compared to the doubling that might have been expected by the halving of the film thickness. Even more
20 surprising is that if the 10.5 micron film is stretched again by a further 10%, the percentage increase in oxygen transmissivity is only 7.5% compared to 54% for the 21 micron film if it is stretched by a similar 10% and in fact the resistance to oxygen, transferral through the 10.5 micron film is actually better at this point than it is for the 21 micron film that has not been pre-stretched.

In another example linear low density polyethylene film of initially generally 24 microns thick (samples A/B) was stretched to the degree that would normally occur when applying same to a bale during forming a silage making envelope to create samples C and D. Sample C has a 55% stretch level and sample D has a 70% stretch level simulating the usual degrees of stretch when applying normal silage making film to a bale. Samples E/F are the film of A/B that has been pre-stretched to beyond its yield point, the stretch being by 150% to increase its length and decrease its thickness. That is to say if the film was 100 m long initially, after the pre-stretch it would be 250 m long. The samples of E/F, after the pre-stretch stage have been relaxed by about 18% of the total, stretched length. Finally the samples G/H are the film of samples E/F that has undergone a secondary or further stretch of 33% of the relaxed state. The following table lists the samples, the approximate thickness of each sample and the tested oxygen transmissivity (cc/m²/day).

Sample	Thickness (Microns)	Oxygen Transmissivity
A	24	12170
B	24	10900
C	18	18600
D	17	21300
E	13	14550
F	13	12600
G	12	13660
H	12	13370

It will be apparent from the foregoing that samples E to H are approximately half the thickness of samples A and B and their oxygen transmissivity is not significantly greater than for samples A and B. More particularly, however, the samples G and H show that placing the pre-stretched plastics film through a secondary stretch to a level even greater than the pre-stretch level, also does not significantly affect the oxygen transmissivity levels.

In still further examples, clear polyethylene stretch film nominally of a thickness of 50 microns was used. The film was stretched generally uniformly across its width to beyond its yield point to varying degrees and either not

relaxed at all or relaxed to varying degrees substantially uniformly across its width. Various samples of the unstretched and stretched films were then tested for oxygen permeability and the results of these tests are set out in the following table. It should be noted that the test equipment had an upper limit of 24,000 5 cc/m²/day and any gas permeability tested that was above this limit could not be established. The film thickness or gauge was established as an average thickness by utilising the weight and area of the samples tested. The normalised permeability figure is a figure normalised with regard to thickness relative to the unstretched sample.

	<u>Film Treatment</u>	<u>Film Gauge (microns)</u>	<u>Average gas permeability (cc/m²/day)</u>	<u>Normalised Permeability (cc/m²/day)</u>
1.	Unstretched film	46.3	5580	5580
2.	Stretched by 182% and not relaxed	19.5	>24,000	>10,108
3.	Stretched by 155% and relaxed by 5.8%	20.6	19,000	8454
4.	Stretched by 145% and relaxed by 11%	21.8	9546	4495
5.	Stretched by 148% and relaxed by 15.7%	22.5	8820	4286
6.	Stretched by 180% and relaxed by 20%	25.0	6467	3492

It is believed the foregoing figures show a significant gas permeability reduction between tests 2 and 3 whereby at or around a 5% relaxation rate a reduction in gas permeability might be expected. Even more significant advantages are achieved when the relaxation level is around 10% or greater than compared 15 with the same unstretched film.

In further testing UV stability of plastics material film produced according to the present invention was tested and compared to the same unstretched film. The film tested was 25 micron thick clear polyethylene film. This film was tested

in an unstretched condition and also after being stretched beyond its yield point by 70% and not relaxed (gauge 17.2 microns) and secondly stretched beyond its yield point to 150% and thereafter relaxed by 20% so as to have a thickness of 13.0 microns. These films were then tested in a UV light chamber with a fluorescent lamp (313 nm) under standard UNE 53-104 (70°C). The method utilised allowed for evaluation of the UV degradation of films under stretched conditions ["Cast Silage Wrap Film Evaluation", A. Manrique and C. Llop, CRI report LAIT 4032, October 22nd, 1990]. The results applicable to the stretched and relaxed film were normalised given the difference in thickness between the non-stretched film and the stretched film. The results of this testing are set out in the following table :-

	Hours to failure of 25 micron film	Hours to failure of film stretched by 70% and not relaxed	Hours to failure of film stretched by 150% and relaxed by 20%
Clear film	140	97.4	269

Clearly the film that was stretched and not relaxed performed worse than the other two and the film that was stretched and relaxed performed better than both the other samples tested.

Referring now to Figures 2 to 4, there is illustrated one possible means of applying pre-stretched plastics material film 13' to a bale for producing silage. A similar process may be used for any other material, product, or combination of products where the current process would prove useful.

In this arrangement the bale 24 is supported on rollers 25, 26 carried by a rotatable frame 27. The rollers 25, 26 are driven to rotate the bale 24 about its axis as indicated by arrows 28. At the same time, the frame 27 and the bale 24 carried thereby is rotated as indicated by arrows 29. As is shown best in Figure 4, film 13' is led from a roll 30 of such film rotatably supported on a frame 31 to be sequentially applied in overlapping sections to the bale 24 as shown in Figure 4. Typically the bale 24 would be covered in at least two and sometimes three layers of such film to form a wrapping envelope. Figures 2 and 3 to 6

illustrate one mechanism 32 for outfeeding of the film from the roll 30. In this example, the mechanism 32 includes a pair of rollers 33, 34 mounted on a swinging arm 35 urged in a direction such that the first roller 33 engages and is driven by rotation of the roll of film 30. The film 13' itself is led from the roll 30
5 around the second roller 34 to the bale 24. The roller 34 is driven at a speed in direct relationship to the speed of the first roller 33 by a pair of sprocket wheels 36, 37 and a sprocket chain 38. The size of the sprocket wheels 36, 37 is approximately equal so that no tension is imparted to the film 13' by the rollers 33, 34 rotating at different speeds. It may, however, be desirable to impart a
10 small tension to the film 13' at this point and in consequence the roller 34 may be arranged to rotate at a speed sufficient to impart up to 40% elongation in the film at this point, preferably of the order of 30% elongation. In some cases it may be desirable to have secondary relaxation up to 10%.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:⁴

1. A method of forming a plastics material product, said method including providing a plastics material member being a film, fibre or filament and stretching said member beyond its yield point to decrease its thickness and increase its length, at least partially relaxing said stretched plastics material member whereby the plastics material member achieves either or both
 - (i) an improved resistance to degradation from UV light radiation, and
 - (ii) an improved resistance to oxygen or other gas transmissivity,and forming said plastics material member into said product.
2. A method of forming a plastics material product including providing a plastics material member being a film, fibre or filament and stretching said member beyond its yield point to decrease its thickness and increase its length, and at least partially relaxing said stretched plastics material member to form said product whereby the plastics material member achieves either or both
 - (i) an improved resistance to degradation from UV light radiation, and
 - (ii) an improved resistance to oxygen or other gas transmissivity.
3. A method according to Claim 1 or Claim 2, wherein the plastics material member is substantially uniformly relaxed across its cross-section transverse to the stretching direction.
4. A method according to anyone of Claims 1 to 3, wherein said stretched plastics material member is relaxed by at least 5% of its total stretched length.
5. A method according to anyone of Claims 1 to 3, wherein said stretched plastics material member is relaxed by at least 10% of its total stretched length.
6. A method according to anyone of Claims 1 to 5, wherein after said at least partial relaxation, said plastics material member is fixed at said length whereby further relaxation is prevented.

7. A method according to Claim 6, wherein said fixing of the length of said plastics material member is by removal of means through a process such as an annealing process.
8. A method according to anyone of Claims 1 to 7, wherein said plastics material member is a film and said film is laminated with at least one other film of plastics or other material.
9. A plastics material member having a decreased oxygen permeability and increased resistance to UV degradation, said plastics material member being a film, fibre or filament, stretched beyond its yield point to decrease its thickness and increase its length, said plastics material member being at least partially relaxed.
10. A plastics material member having a decreased oxygen permeability, said plastics material member being a film, fibre or filament, stretched beyond its yield point to decrease its thickness and increase its length, said plastics material member being at least partially relaxed.
11. A plastics material member having an increased resistance to UV degradation, said plastics material member being a film, fibre or filament, stretched beyond its yield point to decrease its thickness and increase its length, said plastics material member being at least partially relaxed.
12. A plastics material member according to anyone of Claims 9 to 11, wherein the stretched plastics material member is relaxed by at least 5%, preferably 10%, of its total stretched length.
13. A plastics material product formed from a plastics material member according to anyone of Claims 9 to 12.

14. A method of wrapping a material, object or objects to create an anaerobic atmosphere within a wrapping envelope, said method including providing a plastics material film and stretching said film beyond its yield point to decrease the thickness and increase the length of the film, at least partially relaxing said stretched plastics material film, applying said relaxed stretched plastics material film to be wrapped in at least one overlapping layer with at least sufficient applied further tension to form said wrapping envelope with an anaerobic atmosphere therewithin.

15. A method of wrapping a material, object or objects, to create an anaerobic atmosphere within a wrapping envelope, said method including providing an at least partially relaxed plastics material film pre-stretched beyond its yield point to increase its length and decrease its thickness, applying said pre-stretched plastics material film to be wrapped in at least one layer with at least sufficient applied further tension to form said wrapping envelope with an anaerobic atmosphere therewithin.

16. A method according to Claims 14 or Claim 15, wherein the object is a bale of silage making material.

17. A method according to anyone of Claims 14 to 16, wherein the at least partially relaxed plastics material film is relaxed uniformly across the width of the film.

18. A method of making silage, including providing a bale of silage making material, forming a wrapping envelope about said bale utilising an at least partially relaxed plastics material film pre-stretched before relaxation beyond its yield point to increase its length and decrease its thickness, applying said pre-stretched plastics material film to be wrapped in at least one overlapping layer to form said wrapping envelope with an anaerobic atmosphere therewithin.

19. A method of making silage including providing a bale of silage making material, and forming a wrapping envelope about said bale having at least one layer of a pre-stretched plastics material film that has been stretched beyond its yield point to form a film with reduced thickness and increased length, at least partially relaxing said film, and applying said pre-stretched plastics material film to said bale with at least sufficient tension to form said wrapping envelope with an anaerobic atmosphere therewithin.

20. A method of making silage including providing a bale of silage making material, forming a wrapping envelope about said bale utilising a plastics material film that has been first stretched beyond its yield point to increase its length and decrease its thickness and thereafter at least partially relaxed, said plastics material film undergoing a secondary stretch after being at least partially relaxed, applying said plastics material film to be wrapped in at least one layer about said bale to form said wrapping envelope with an anaerobic atmosphere therewithin.

21. A method according to Claim 20, wherein said secondary stretch occurs prior to the film being applied to said bale.

22. A method according to Claim 20, wherein said secondary stretch occurs as the film is applied to said bale.

23. A method according to any one of Claims 20 to 22, wherein the secondary stretch is beyond the level of said first stretch.

24. A method according to any one of Claims 20 to 22, wherein the secondary stretch is less than the level of said first stretch.

25. A plastics material film used in any one of the methods according to Claims 14 to 24.

26. A plastics material film for forming an anaerobic wrapping envelope that has first been stretched beyond its yield point to increase its length and reduce its thickness, said film being at least partially relaxed.

27. An anaerobic wrapping envelope including at least one layer of overlapping plastics material film stretched beyond its yield point to increase its length and reduce its thickness, said film being at least partially relaxed before being configured to form said anaerobic wrapping envelope.

28. An anaerobic wrapping envelope according to Claim 27, wherein the film is at least partially relaxed uniformly across its width.

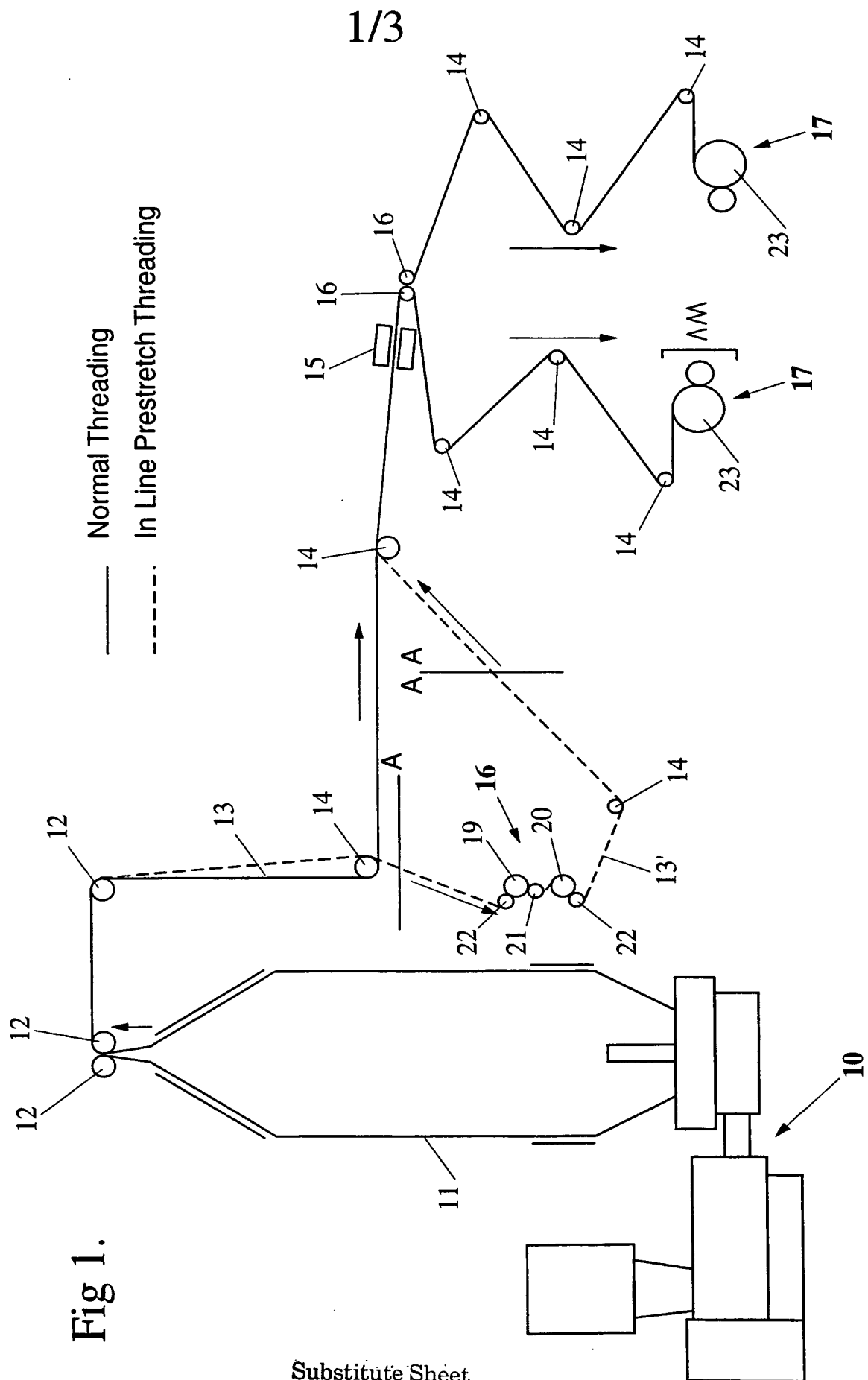


Fig 1.

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Fig 2.

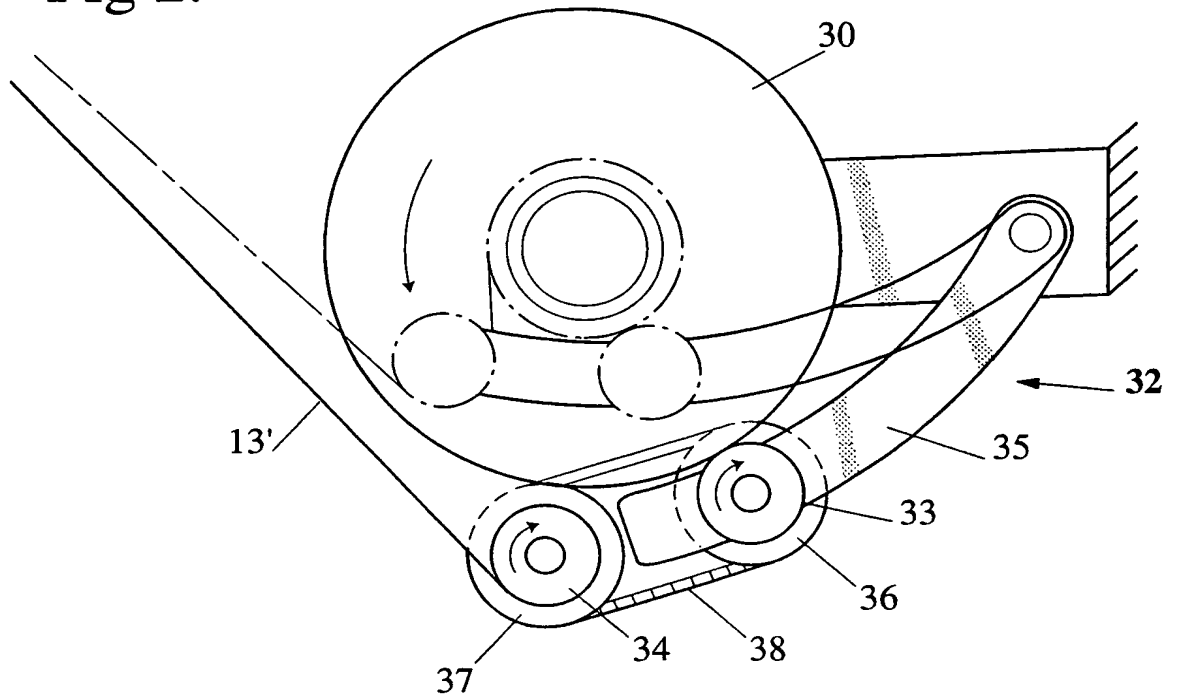
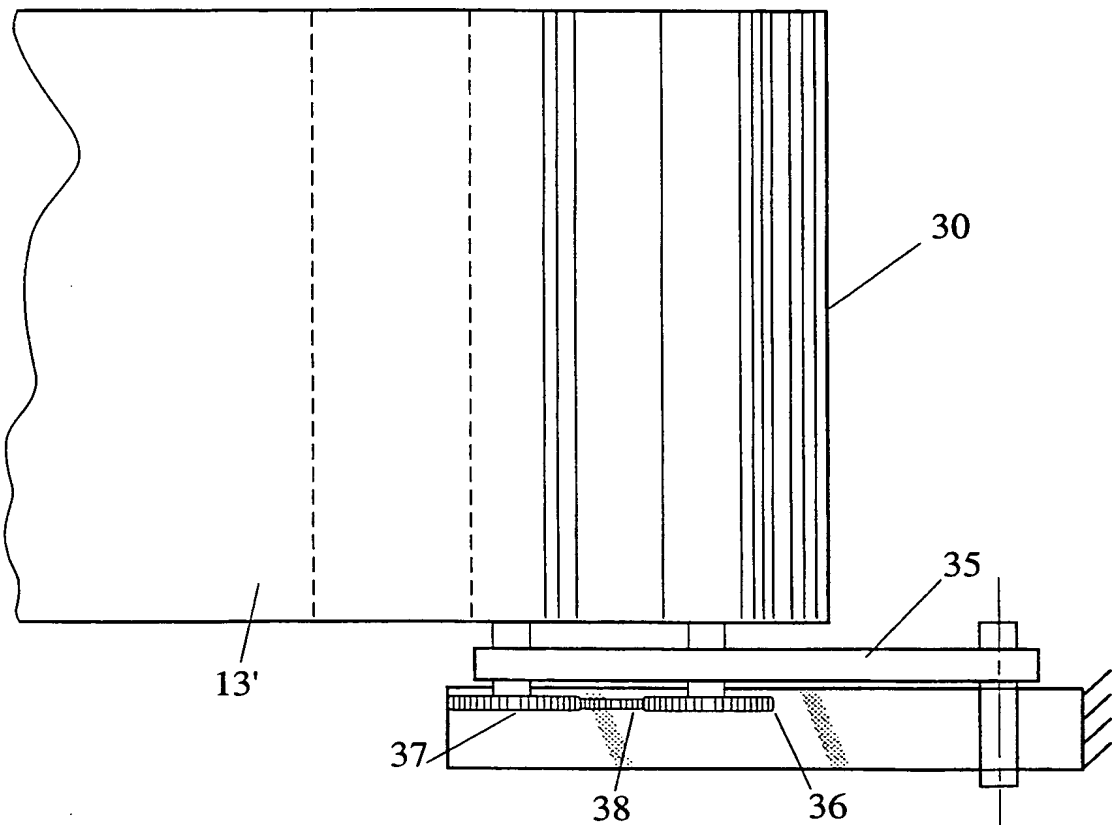


Fig 3.



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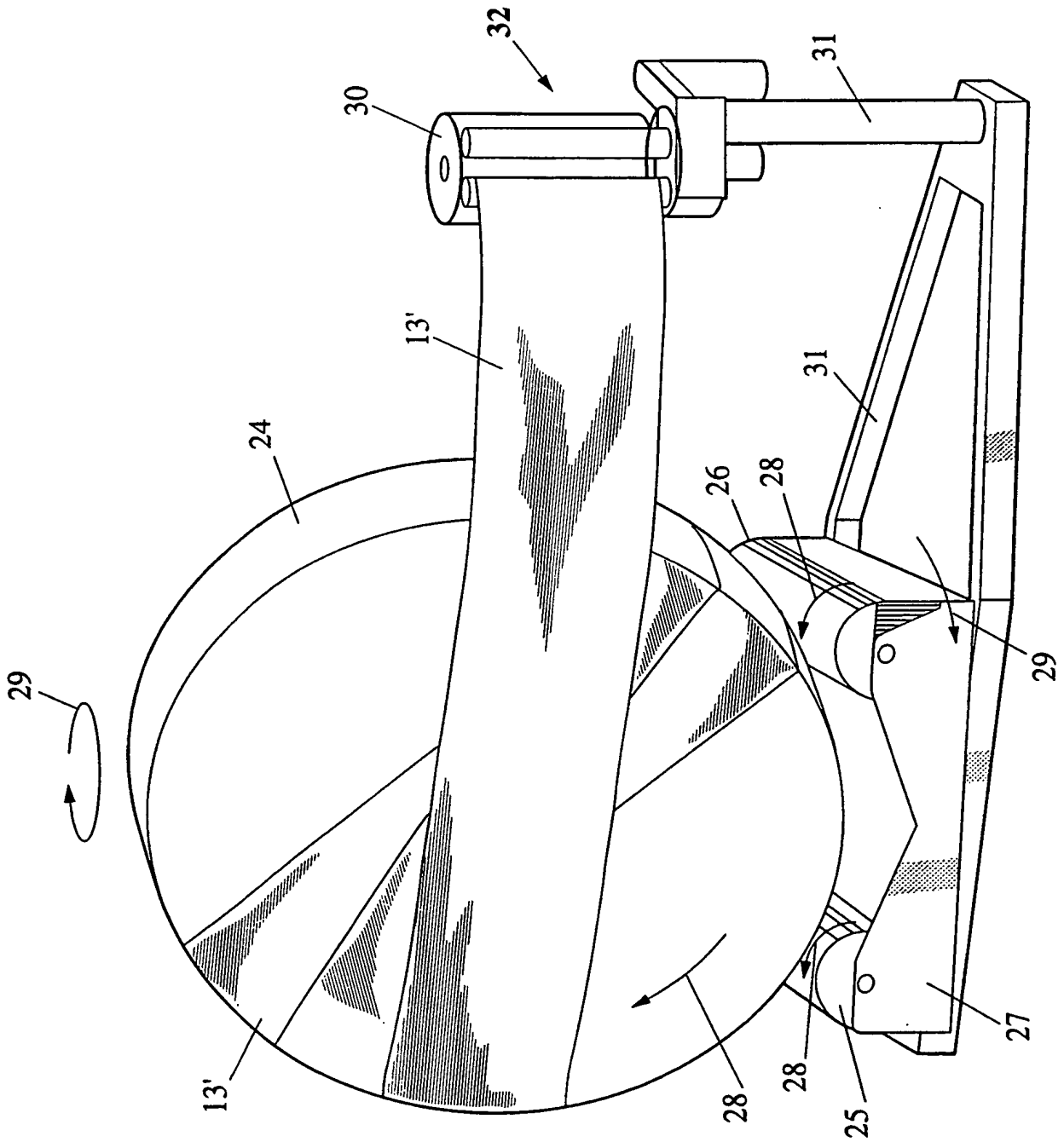


Fig 4.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU 99/00510

A. CLASSIFICATION OF SUBJECT MATTERInt Cl⁶: B29C 71/00, 61/00, 55/00, 55/02, B65B 31/02, 53/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int Cl⁶: B29C 71/00, 17/02, 61/00, 55/00, 55/02, B65B 31/02, 53/00Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
AU : IPC AS ABOVE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP, 225631, A2, (DIAFOIL Co.) 16 June 1987 (note : Crystallisation directly results in an "improved" * resistance per unit thickness to UV degradation and O ₂ permeability)	1,2,9,10,11,14,15,18,19 20,26,27.
X	GB, 2083002, A, (LANCASTER) 17 March 1982 (see page 7, lines 35-65, claim 2)	1,2,9,10,11,14,15,18,19 20,26,27.
X	GB, 2063809, A, (LANCASTER) 10 June 1981 (see page 2, lines 39-45, p.3 lines 5,6, p.5 lines 50-52)	1,2,9,10,11,14,15,18,19 20,26,27.

☒ Further documents are listed in the
continuation of Box C☒ See patent family annex

* Special categories of cited documents:		"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier application or patent but published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search
13 July 1999

Date of mailing of the international search report

14 JUL 1999

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU 99/00510

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	US, 5797240, A, (MARTIN-COCHER) 25 August 1998	1,2,9,10,11,14, 15,18,1920,26, 27.
X,P	WO, 98/50219, A1, (FIRST GREEN PARK) 12 November 1998	1,2,9,10,11,14, 15,18,1920,26, 27.
X	US, 5458841, A, (SHIRRELL) 17 October 1995	1,2,9,10,11,14, 15,18,1920,26, 27.
<p>* NOTE : The claims use the term "improved". The definition of "improved" from page 6 is "improved per unit thickness of the material", <u>not</u> improved per se.</p>		

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/AU 99/00510

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report			Patent Family Member			
EP	225631	DE 3682752	JP 62136013	KR 9107303	US 4814221	
GB	2083002 AND 2063809	AU 75058/81	CA 1167365	DE 3135370	FR 2489780	JP 57077405
		NO 813035	US 4387552	US 4387548	US 4302920	US 4336679
		AU 64566/80	CA 1150614	DE 3043807	FR 2470056	JP 56095809
WO	98/50219	AU 70172/98				
US	5797240	WO 9404419	EP 656853	FI 950722	NO 950702	PL 307789
		RU 2089475	SK 243/95	FR 2695102	HU 9500577	
US	5458841	AT 133606	AU 19501/92	CA 2071422	EP 531021	JP 5208443
		NZ 244093	ZA 9205020			
END OF ANNEX						